

## Claims

- 1 1. A microprocessor based system comprising:
  - 2 a microprocessor; and
  - 3 a memory comprising instructions, which, when executed by the microprocessor,
  - 4 cause the microprocessor to store packet data in a physical address space of the memory;
  - 5 to generate a logical index of the physical address space, the logical index has a logical
  - 6 address space twice the size of the physical memory address space, the logical index to
  - 7 logically map the physical memory addresses, such that each physical memory address
  - 8 maps to two logical addresses; and to generate an access pointer to provide bi-directional
  - 9 logical access to the logical address space.
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